

Table 2-1. Reclamation Areas and Cover Types

Mine Panel Area	Subarea ¹	Cover Type	Area (acres)
Panel A	Area 1 - Backfilled Pit(s)	Topsoil Over Dinwoody and Chert	60
	Area 1 - External ODA	Topsoil Over Dinwoody and Chert	20
	Area 2 - Backfilled Pit(s)	Topsoil Only	115
	Area 2 - External ODA	Direct Revegetation, Topsoil Only	75
Panel B	Backfilled Pit(s)	None - Actively Mined, Open	155
	External ODA		50
Panel C	Backfilled Pit(s)	Topsoil Over Dinwoody and Chert	105
Panel D	North - Backfilled Pit(s)	Topsoil Only	95
	North - External ODA	Direct Revegetation	65
	South - Backfilled Pit(s)	Topsoil Over Chert	110
Panel E	Area 1 - Backfilled Pit(s)	Topsoil Over Chert	60
	Area 1 - External ODA	Topsoil Over Chert	70
	Area 2 - Backfilled Pit(s)	Topsoil Over Dinwoody and Chert	150
Pole Canyon ODA	Pole Canyon ODA	Dinwoody Over Chert ²	130

Notes:

¹ Subareas are identified based on RI sampling areas (see RI Report), with further delineations of backfilled pits, external ODAs, and reclaimed areas (outside of RI sampling areas) based on mine reclamation data.

² A Dinwoody Over Chert cover was constructed on the Pole Canyon ODA in 2015 under a Non-Time-Critical Removal Action (NTCRA). During RI data collection and reporting (see RI Report), the cover types on the Pole Canyon ODA were Direct Revegetation and Topsoil Only.

Table 2-2. Predicted Selenium Loading from Each Source Area to Springs Complex in 2050

Mine Feature	Area (acres)	Predicted Selenium Load to Springs in 2050 (No Action) (lbs/year)	% of Total Load to Springs
		Direct Infiltration	
Panel A Area 2	190	130	41%
Pole Canyon ODA	130 ^{*1}	16	5%
Panel D	270	104	33%
Panel E	120 ^{*2}	68	21%
		318	

Notes:

lbs/day - pounds per day

*1 - Area covered in the 2013 NTCRA.

*2 - Area where seleniferous materials are present.

Table 3-1. Applicable or Relevant and Appropriate Requirements (ARARs)

Requirement	Standard, Limitation, or Requirement Criteria	Citation	Description	Category
Federal				
Chemical-Specific	Safe Drinking Water Act	42 U.S.C. §§ 300f et seq.	Protection of public water systems and underground sources of drinking water.	Applicable
	National Primary Drinking Water Regulations	40 C.F.R. Part 141	Establishes health-based standards or Maximum Contaminant Levels (MCLs) for public water systems.	Applicable
	Clean Water Act	33 U.S.C. §§ 1251 et seq.	Water pollution prevention and control.	Applicable
	Water Quality Standards	40 C.F.R. Part 131	Sets criteria for water quality based on toxicity to aquatic organisms and human health.	Applicable
	National Recommended Water Quality Criteria November 2002	Section 304(a) of Clean Water Act EPA-822-R-02-047	Recommended water quality criteria for the protection of aquatic life and human health in surface water.	Applicable
	National Emission Standards for Hazardous Air Pollutants	40 C.F.R. 61	Recommended air pollutant restrictions.	Relevant and Appropriate
Action-Specific	National Pollutant Discharge Elimination System (NPDES) Permit Regulations	40 C.F.R. § 122 to 125	Permitting requirements for the discharge of "pollutants" from any "point source."	Applicable
	Surface Mining Control and Reclamation Act	30 U.S.C. § 1201 30 C.F.R. Part 816 30 C.F.R. Part 784	Permanent program performance standards for surface mining activities; minimum requirements for reclamation and operations.	Relevant and Appropriate
	Resource Conservation and Recovery Act	42 U.S.C. §§ 6901 et seq. 40 C.F.R. Parts 260-265 and 268	Sets criteria for hazardous waste management.	Applicable
	Archaeological and Historic Preservation Act	40 C.F.R. § 6.301(c) 16 U.S.C. 469 et seq.	Data recovery and preservation activities.	Applicable
	National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, and National Historic Landmark Regulations	16 U.S.C. §§ 470 et seq. 43 C.F.R. 7 36 C.F.R. Parts 60, 63, 65 and 800 40 C.F.R. § 6.301(b,c)	Section 106 of NHPA process balances needs of federal undertaking with effects the undertaking may have on historic properties.	Applicable
	Historic Sites, Building, Objects, and Antiquities Act	16 U.S.C. § 461 et seq. 40 C.F.R. 6.301(a) 36 C.F.R. 62	Procedures to preserve archaeological or historical sites.	Applicable
	Migratory Bird Treaty Act	16 U.S.C. §§ 703 et seq.	Taking, killing, possessing migratory birds and migratory game birds.	Applicable
	Fish and Wildlife Coordination Act	16 U.S.C. § 661 et seq. 16 U.S.C. 1531-1544 40 C.F.R. § 6.302(g)	Fish and wildlife protection: requires federal agencies involved in actions that will result in the control or structural modification of any natural stream or body of water for any purpose, to take action to protect the fish and wildlife resources that may be affected by the action.	Applicable
	Endangered Species Act	7 U.S.C. 136 16 U.S.C. 460 16 U.S.C. §§ 1531 et seq. 50 C.F.R. Part 402 40 C.F.R. § 6.302	Substantive requirements include prohibition against taking an endangered or threatened species; if such species are present, the Fish and Wildlife Service will be consulted.	Applicable
	Bald and Golden Eagle Protection Act	16 U.S.C. §§ 668 et seq. 50 C.F.R. 22	Protection of the Bald and Golden Eagles.	Applicable
	Clean Air Act	40 C.F.R. 50 42 U.S.C. 7401 et seq.	Protection of the nation's air quality.	Relevant and Appropriate
	Mineral Leasing Act	30 USC § 181et seq. 43 CFR 3500-3599	Regulates discovery, mining, processing and reclamation on federal phosphate leases.	Applicable

Table 3-1. Applicable or Relevant and Appropriate Requirements (ARARs)

Requirement	Standard, Limitation, or Requirement Criteria	Citation	Description	Category
Location-Specific	Protection of Floodplains	40 C.F.R. § 6.302 40 C.F.R. 6 Appendix A	Regulates construction in floodplains.	Applicable
	Protection of Wetlands	40 C.F.R. § 6.302 40 C.F.R. 6 Appendix A	Wetlands Protection: Executive Order 11990 requires agencies conducting certain activities to avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practicable alternative exists.	Applicable
	2003 Revised Forest Plan for the Caribou National Forest & 1997 Revised Forest Plan - Targhee National Forest		Provides guidance for all natural resource management activities and establishes management standards within the Caribou-Targhee National Forest.	Applicable
	Considering Wetlands at CERCLA Sites Guidance	OSWER 9280.03 (May 1994)	Guidance to evaluate potential impacts on wetlands.	Applicable
	Archaeological Resources Protection Act	16 U.S.C. §§ 470 40 C.F.R. 7	Steps must be taken to protect archaeological resources and sites that are on public and Indian lands and to preserve data.	Applicable
	Caribou-Targhee Land Use Management Plan (National Forest Management Act)	16 U.S.C. 1601-1614 36 C.F.R. 219	Establishes multiple use goals and objectives, forest-wide management requirements, and monitoring and evaluation requirements. Establishes direction so that future decisions affecting the Forest will include an interdisciplinary approach to achieve integrated consideration of physical, biological, economic and other sciences.	Applicable
	National Forest Management Act of 1976 and Forest and Rangeland Renewable Resources Planning Act of 1971	16 U.S.C. 1600 36 C.F.R. 219	Guidance for natural forest system land management and resource planning.	Applicable
	Federal Land Policy and Management Act of 1976 (FLPMA)	43 U.S.C. 1701-1771; 1782	Public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process, and the land will be managed for use and protection of the land and its natural resources.	Applicable
State of Idaho				
Chemical-Specific	Idaho Water Quality Standards	IDAPA 58.01.02	Water quality standards and wastewater treatment requirements, including but not limited to: Administrative policy for protection of waters of the State (.050.02); Antidegradation policy (.051); Mixing zone policy (.060); Violation of water quality standards (.080); Analytical procedures (.090); Surface water use designations and nondesignated surface waters (.100 to .101); Designations of surface waters found within Salmon Basin (.130); General surface water quality criteria (.200); Surface water quality criteria for aquatic life, recreation, water supply, wildlife and aesthetics use designations (.250 to .253); Variances from water quality standards (.260); and Site-specific surface water quality criteria (.275).	Applicable
	Public Drinking Water Systems Rules	IDAPA 58.01.08	Control and regulate the design, construction, operation, maintenance, and quality control of public drinking water systems to provide a degree of assurance that such systems are protected from contamination and maintained free from contaminants which may injure the health of the consumer.	Applicable
	Idaho Ground Water Quality Rule	IDAPA 58.01.11.200	Numerical and narrative standards that apply to all groundwater of the state.	Applicable
	Rules and Standards for Hazardous Waste	IDAPA 58.01.05	Rules and standards for hazardous waste.	Applicable
	Idaho Hazardous Substance Emergency Response Act	Idaho Code §§39-7101 to 7115	Facilitates emergency response planning and requires expedient response and/or containment for hazardous substance release.	Relevant and Appropriate

Table 3-1. Applicable or Relevant and Appropriate Requirements (ARARs)

Requirement	Standard, Limitation, or Requirement Criteria	Citation	Description	Category
Action-Specific	Solid Waste Management Rules	IDAPA 58.01.06	Establishes requirements applicable to all solid waste and solid waste management facilities.	Relevant and Appropriate
	Idaho Surface Mining Act	Idaho Code, Title 47, Chapter 15	Procedures for reclamation and vegetative planning.	Relevant and Appropriate
	Exploration and Surface Mining Rules	IDAPA 20.03.02	Best management practices and reclamation for surface mining operations.	Applicable
	Well Construction Standard Rules	IDAPA 37.03.09	Well construction and abandonment.	Applicable
	Appropriation of State Water	Idaho Code, Title 42, Chapters 1 and 2, Sections 101-250	Water rights and reclamation.	Applicable
	Rules for Control of Air Pollution in Idaho (Rules for Control of Fugitive Dust)	IDAPA 58.01.01 (650-651)	These rules provide for the control of air pollution in Idaho.	Relevant and Appropriate
	Stream Channel Alteration Rules	IDAPA 37.03.07	Prevent alterations which will be a hazard to the stream channel and its environment.	Applicable
	Idaho Classification and Protection of Wildlife Rule	IDAPA 13.01.06.300	Classifies fish and wildlife species; identifies species of special concern, and protection of wildlife species from taking and possessing.	Applicable
	Protection of Animals and Birds	Idaho Code §36-1101 to 1103	Prohibits taking of wildlife, birds and fur-bearing animals; declares exceptions.	Applicable
Location-Specific	Preservation of Historical Sites	Idaho Statutes Title 67, Chapters 46 and 41	Guidance to preserve historical, archaeological, architectural, and cultural heritage.	Applicable
	Stream Channel Alteration Rules	IDAPA 37.03.07	Prevent alterations which will be a hazard to the stream channel and its environment.	defer to Action-specific ARAR
	Idaho Water Quality Act	Idaho Code, Title 39, Chapter 36	Procedures to preserve water quality.	Applicable
	Mine Tailings Impoundment Structure Rules	IDAPA 37.03.05	Applies to structures upon which construction, lift construction, enlargement, or alteration is underway on or after July 1, 1978; establishes design criteria.	Applicable
State of Wyoming				
Chemical-Specific	Wyoming Surface Water Quality Standards	W.S. 35-11-302	Water quality criteria for aquatic life and human health.	Applicable

Table 3-2. Other Criteria or Guidance To Be Considered (TBCs)

Requirement	Standard, Limitation, or Requirement Criteria	Citation	Description	Category
Federal				
Chemical-Specific	National Secondary Drinking Water Regulations	40 C.F.R. Part 143	Establishes welfare-based standards (secondary MCLs) for public water systems.	TBC
	NOAA Freshwater Sediment Benchmarks	Buchman, M. F. 2009. NOAA Screening quick reference tables. NOAA OR&R Report 09-1, Seattle WA. Office of Response and Restoration Division, NOAA	Benchmarks for freshwater sediments, thresholds from NOAA Screening Quick Reference Tables (SQUIRTS).	TBC
Action-Specific	American Indian Religious Freedom Act	42 U.S.C. §§1996 et seq.	Protection of traditional culture and religious rights and practices of Native Americans.	TBC
Location-Specific	Pocatello Field Office Proposed Resource Management Plan and Final Environmental Impact Statement	U.S. BLM FES 10-12	This Proposed Resource Management Plan and Final Environmental Impact Statement describe and analyze the impacts of four alternatives for managing the public lands administered by the Pocatello Field Office in southeastern Idaho.	TBC
	Native American Graves Protection and Repatriation Act	25 U.S.C. §§ 3001 et seq. 43 C.F.R. 10	Protects Native American cultural items including human remains, funerary objects, sacred objects, and objects of cultural patrimony.	TBC
State of Idaho				
Chemical-Specific	Secondary Drinking Water Regulations	IDAPA 58.01.08.400	Establishes welfare-based standards (secondary MCLs as defined in 40 C.F.R. Part 143) for public water systems.	TBC
Action-Specific	Idaho Non-Point Source Management Plan		Guidance to protect or restore (where possible) the beneficial uses of the state's surface water and groundwater.	TBC
	Catalog of Stormwater Best Management Practices for Idaho Cities and Counties		Procedures to control erosion and sediment during and after construction.	TBC
Location-Specific	Safety of Dams Rules	IDAPA 37.03.06	Guidance to establish acceptable standards for construction and to provide for safety evaluation of new or existing dams.	TBC
	Selenium Area Wide Investigation Area Wide Risk Management Plan		Discretionary guidance document to assist in mine-specific risk management.	TBC

Table 3-3. Preliminary Remediation Goals

Remedial Action Objective (RAO)	Preliminary Remediation Goal (PRG)
Groundwater	
Prevent future use of alluvial or Wells Formation groundwater with arsenic or selenium concentrations above MCLs as a drinking water source.	MCL 0.05 mg/L Selenium MCL 0.01 mg/L Arsenic
Reduce concentrations of arsenic and selenium in Wells Formation and alluvial groundwater to below MCLs within a reasonable time frame given the circumstances of the Site.	MCL 0.05 mg/L Selenium MCL 0.01 mg/L Arsenic
Prevent future stock watering using groundwater with selenium at levels that would represent an unacceptable risk.	Risk-Based Level 50 µg/L Selenium
Overburden/Soils/Vegetation	
Prevent exposure of livestock to vegetation on ODAs and in associated seeps with levels of selenium that pose an acute and chronic risk.	Risk-Based Level 50 mg/kg Selenium in Vegetation
Present unacceptable risks to terrestrial biota from soil and vegetation with elevated selenium concentrations on overburden or backfilled pits and external ODAs with minimal or no covers and in overburden seep/riparian areas downgradient of ODAs.	Risk-Based Level 50 mg/kg Selenium in Vegetation
Prevent unacceptable risks to future Seasonal Ranchers from ingestion of beef as the primary contributor of cancer risk, due to arsenic concentrations (calculated on a Site-wide basis) for soil.	Reduce Sitewide Arsenic Concentrations in Surface Soil
Surface Water	
Reduce loading of selenium from groundwater to surface water so that it does not result in concentrations that represent an unacceptable risk to aquatic life in the Lower Sage Creek and Crow Creek watersheds.	Aquatic Water Quality Standard 5 µg/L Selenium Site-Specific Standard 10.7 µg/L Selenium
Reduce selenium concentrations in the lower Sage Creek and Crow Creek watersheds to below levels that pose unacceptable risks for aquatic life.	Aquatic Water Quality Standard 5 µg/L Selenium Site-Specific Standard 10.7 µg/L Selenium
Non-Regulated Surface Water	
Prevent unacceptable risks to human receptors from ingestion of non-regulated surface water (seeps and detention ponds) due to arsenic.	MCL 0.01 mg/L Arsenic
Prevent livestock exposure to water in seeps or detention basins with selenium concentrations that would represent an unacceptable risk.	Risk-Based Level 0.134 mg/L Arsenic

Notes:

mg/L - milligrams per liter
mg/kg - milligrams per kilogram
µg/L - micrograms per liter

Table 4-1. Potential Sources – Overburden Solids and Soils

Potential Source Area	Materials	Current Reclamation Status	Estimated Area (acres)
Panel A Area 2	Overburden Solids and Soils	Topsoil Only Cover	115
Panel A External ODA		Topsoil Only Cover	75
Panel D North/South	Overburden Solids and Soils	Topsoil Only Cover	205
Panel D External ODA		Direct Revegetation	65

**Table 4-2. Retained Remedial Technologies and Process Options
for Development of Remedial Alternatives**

GRA Remedial Technology	Process Option
No Further Action	None
Institutional Controls	Land-Use Controls Deed Restrictions Information Programs
Access Controls	Fencing/Signage Grazing Controls
Containment/Engineered Covers	Tailings Cover Chert/Limestone Cover Dinwoody Cover Geosynthetic Cover (GM/GCL)
Sediment Control Features	Dikes/Berms Detention Basins
Surface Controls	Grading Erosion Control and Protection Vegetation
Diversion	Open/Closed Channels
Removal	Excavation
Disposal (solids)	Onsite Disposal Onsite Consolidation Offsite Disposal
Disposal (aqueous)	Onsite Treatment Facility
Physical Treatment (aqueous)	Gravity Separation Mechanical Separation Media Filtration Reverse Osmosis/Ultrafiltration
Chemical Treatment (aqueous)	Chemical Precipitation Oxidation/Reduction
Biological Treatment (aqueous)	Biodegradation

Table 5-1. Sitewide Remedial Alternatives

Remedial Alternative	Pole Canyon ODA	Panel A Area 2	Panel D Backfilled Pit / External ODA	Groundwater Discharge at Hoopes Spring and South Fork Sage Creek Springs
1 – No Further Action	NTCRA O&M activities terminated.	No action.	No action.	No action.
2 – Barrier Covers	NTCRA O&M activities continued.	2 foot thick Dinwoody/Chert cover or equivalent	2 foot thick Dinwoody/Chert cover or equivalent.	2a – No action. 2b – 2,000 gpm treatment 2c – 3,000 gpm treatment
3 – Barrier Covers + Infiltration Reduction Covers	NTCRA O&M activities continued.	2 foot thick Dinwoody/Chert cover or equivalent	3 foot thick Dinwoody/2 foot thick Chert or equivalent.	3a – No action. 3b – 2,000 gpm treatment 3c – 3,000 gpm treatment
4 – Infiltration Reduction Covers	NTCRA O&M activities continued.	3 foot thick Dinwoody/2 foot thick Chert or equivalent.	3 foot thick Dinwoody/2 foot thick Chert or equivalent.	4a – No action. 4b – 2,000 gpm treatment 4c – 3,000 gpm treatment
5 – Geosynthetic Covers	NTCRA O&M activities continued.	Geosynthetic cover (GM, GCL or equivalent).	Geosynthetic cover (GM, GCL or equivalent).	5a – No action. 5b – 2,000 gpm treatment 5c – 3,000 gpm treatment

Notes:

GCL – Geosynthetic Clay Liner

GM – Geomembrane

gpm – gallons per minute

NTCRA – Non-Time-Critical Removal Action

ODA – Overburden Disposal Area

O&M – Operations and Maintenance